

A METHOD AND APPARATUS FOR OPTIMIZING SIGNAL TRANSFORMATION IN  
A FRAME-BASED COMMUNICATIONS NETWORK

ABSTRACT OF THE DISCLOSURE

A method of and apparatus for optimizing signal transformation from a twisted pair transmission line to a combination transmitter and receiver for a frame-based communications network, the transmitter having a transmit output pair port for transmitting signals onto the frame-based communications network over the twisted pair transmission line, the receiver having a receive input pair port for receiving signals from the frame-based communications network over the twisted pair transmission line. A transformer is coupled between the twisted pair transmission line and each of the transmit output pair port and the receive input pair port. The transformer has a coil across the twisted pair, a transmit coil across the transmit output pair port, and a receive coil across the receive input pair port. A transfer ratio between the transmit coil and the coil across the twisted pair is optimized for transmitting signals. A transfer ratio between the receive coil and the coil across the twisted pair is optimized for receiving signals.

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